

Title: An overview of new technologies driving innovation in the Airborne Science community

Abstract:

Following a more than a century of scientific aircraft and ballooning there is a sense that a renaissance of sorts is at hand in the aviation industry. The advent of incredibly miniaturized autopilots, inertial navigation systems, GPS antennae, and payloads has sparked a revolution in manned and unmanned aircraft. Improved SATCOM and onboard computing has enabled realtime data processing and improved transfer of data on and off the aircraft, making flight planning and data collection more efficient and effective. Electric propulsion systems are scaling up to larger and larger vehicles as evidenced by the NASA GL-10, which is leading to a new X-plane and is leading to renewed interest in personal air vehicles. There is also significant private and government investments in the development of High Altitude, Long Endurance (HALE) aircraft. This presentation will explore how such developments are likely to improve our ability to observe earth systems processes from aircraft by providing an overview of current NASA Airborne Science capabilities, followed by a brief discussion of new technologies being applied to Airborne Science missions, and then conclude with an overview of new capabilities on the horizon that are likely to be of interest to the Earth Science community.

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